**Table S1.** Missing data.

| Variable | Number of missing values (% of total) |
|---|---|
| **Age** (yr) | 0 (0.00%) |
| **Height** (cm) | 0 (0.00%) |
| **Weight** (kg) | 0 (0.00%) |
| **BMI** (kg/m²) | 0 (0.00%) |
| **Sex** | 0 (0.00%) |
| **Diabetes** | 0 (0.00%) |
| **Diabetes on insulin** | 157 (81.8%) |
| **Hypertension** | 2 (1.04%) |
| **Dyslipidaemia** | 1 (0.52%) |
| **Nicotine** | 4 (2.08%) |
| **Adipositas** | 0 (0.00%) |
| **Preoperative renal disease** | 0 (0.00%) |
| **Peripheral vascular disease** | 14 (7.29%) |
| **Carotid disease** | 21 (10.9%) |
| **Myocardial infarction** | 1 (0.52%) |
| **COPD** | 2 (1.04%) |
| **NYHA** | 1 (0.52%) |
| **CCS** | 3 (1.56%) |
| **Ejection fraction** | 1 (0.52%) |
| **EuroSCORE2** | 8 (4.17%) |
| **Logistic EuroSCORE** | 5 (2.60%) |
| **Aortic valve** | 0 (0.00%) |
| **Mitral valve** | 0 (0.00%) |
| **Tricuspid valve** | 0 (0.00%) |
| **Coronary Artery Bypass** | 0 (0.00%) |
| **Ascending Aortic** | 0 (0.00%) |
| **Aortic Arch** | 0 (0.00%) |
| **Cholesterol** (mmol/L) | 0 (0.00%) |
| **HDL cholesterol**(mmol/L) | 0 (0.00%) |
| **LDL Cholesterol** (mmol/L) | 0 (0.00%) |
| **Quotient overall** (.) | 0 (0.00%) |
| **Triglycerides** (mmol/L) | 0 (0.00%) |
| **Lipoprotein(a)** (mg/dl) | 0 (0.00%) |
| **ECC or MiECC** | 0 (0.00%) |
| **Bypass time** (min) | 0 (0.00%) |
| **Aortic cross clamping** (min) | 0 (0.00%) |
| **Lowest body temperature** (deg C) | 0 (0.00%) |
| **Deep hypothermic cardiac arrest** | 1 (0.52%) |
| **Operation duration** (min) | 0 (0.00%) |

**Table S2.** Sensitivity analysis of the primary outcomes with regard to the Lp(a) threshold. Unadjuasted *P* values are shown.

| Threshold value | 15 mg/dL | 20 mg/dL | 25 mg/dL | 30 mg/dL | 35 mg/dL | 40 mg/dL | 45 mg/dL | 50 mg/dL |
|---|---|---|---|---|---|---|---|---|
| **Postoperative stroke**[†] | 0.558 | 0.773 | 0.540 | 0.370 | >0.99 | >0.99 | 0.732 | >0.99 |
| **30-day mortality** | 0.491 | 0.506 | 0.522 | 0.534 | 0.559 | 0.584 | >0.99 | >0.99 |
| **1 Year follow-up**[‡] | 0.455 | 0.468 | 0.698 | 0.716 | >0.99 | 0.452 | 0.690 | 0.699 |

**Table S3.** Multivariable linear regression of the ratio of postoperative Lp(a) values to preoperative Lp(a) values (in percent) on several surgical characteristics. Note that Lp(a) values below the measurement accuracy (< 2 mg/dl) were excluded from the analysis.

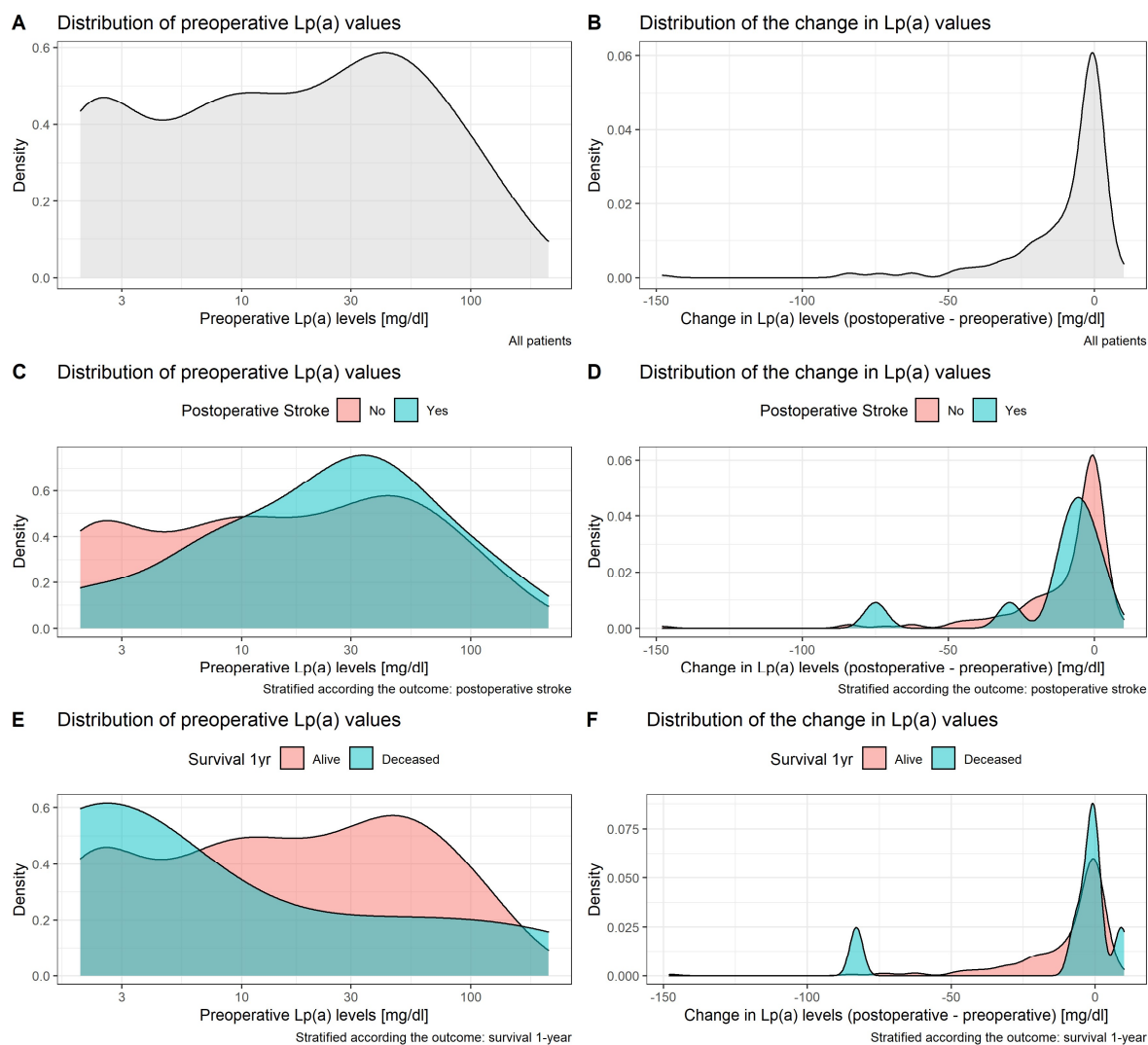| | Coefficient | 95% CI[1] | P |
|---|---|---|---|
| **ECC or MiECC** | | | |
| ECC | — | — | |
| MiECC | 11 | -3.8, 25 | 0.15 |
| **Aortic cross clamping** (hours) | 0.78 | -12, 14 | >0.9 |
| **Lowest body temperature** (degrees C) | -3.9 | -7.8, 0.02 | 0.051 |
| **Deep hypothermiac cardiac arrest** | | | |
| No | — | — | |
| Yes | -35 | -68, -2.2 | 0.037 |
| **Operation duration** (hours) | -12 | -19, -5.0 | <0.001 |

[1]CI = Confidence Interval.

**Figure S1.** Kernel density distributions of preoperative Lp(a) values (on the log-scale) and their changes (origianl scale) for all patients (panels **A**-**B**), stratified according to the outcome postoperative stroke (**C**-**D**) and stratified according to 1-year survival (**E**-**F**).